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TO: Interested parties

10 November 2013

TOUCHED BY GENIUS

Great Barr Hall and The Lunar Society

'From no other single group does a collective contribution to the Industrial Revolution loom so large, in no other Society were the activities so persistently determined by responses to industrialism and its problems. It is because its members so thoroughly and wholeheartedly participated in all its many phases that we celebrate the Lunar Society of Birmingham as the exemplar of the Industrial Revolution.'

Professor E Schofield 1966
Bicentenary Volume. p.111

PLEASE NOTE: This internet version lacks all the illustrations and some of the text.

Peter Allen
Last revised: 6 January 2014

1. Introduction

This document has an important function. It brings together, for the first time, some of the myriad connections which link Great Barr Hall to the world-famous Lunar Society of Birmingham. Samuel Galton Jnr resided here between 1785 and 1797, reckoned as the most productive period of this illustrious fraternity.

Restoration plans for Great Barr Hall have been fraught with difficulties from the very outset. This brave attempt to revitalise one of the most important icons of the Midlands Enlightenment will come to nothing if it fails to create a credible revenue stream. The best way to do that is to exploit, for all it is worth, this short interlude in the history of this otherwise middle-ranking building.

It has been claimed by others that Great Barr Hall was not only ***the favourite venue*** of the Lunar Society but, after Soho House, ***the most-frequently visited***. Furthermore, ***the only eye-witness accounts*** of their much-anticipated monthly meetings comes from their time at Barr, immortalised in the memoirs of Galton's eldest daughter.

Coming from a culture of renowned entrepreneurs I have no doubt the present owners, in conjunction with their PR advisors, will recognise the exploitable elements revealed by this and my other documents on this theme, some of which have still to be revealed.

We are fast approaching 2016, which is the 250th anniversary of the first meeting of the Lunar Society. Great Barr Hall in the throes of restoration could be one of the focal points for the celebrations.

The masterplan in preparation contains many commendable features. I have greatly valued the opportunity afforded by the owners and their architects to influence matters through application of an unrivalled knowledge of all aspects of the site, backed by access to a considerable personal archive. But the masterplan still has some way to go to fully exploit the Lunar Society links and to reach an architectural compromise which best presents this ailing building and avoids the needless intrusion of kitsch.

Local residents will rightly demand the best package we can put together. After all we are asking them to saddle the negative effects of enabling development. We are fast approaching the last opportunity to steer these restoration plans in the right direction.

2. A Microcosm of the Industrial Revolution

The importance of the Lunar Society of Birmingham in world history cannot be over-emphasised. It has been described as "...the most remarkable group of thinkers and inventors in the eighteenth century—which had a more potent effect upon civilisation than that of any other society in history."[1] Testimonials really don't come more effusive than this.

There were never more than fourteen members of this exclusive group. Usually less than half that number met at Lunar Society meetings which were always at the house of one of the members and at the time of the full moon, to assist the journey home. It consisted of Matthew Boulton, James Watt, Erasmus Darwin, Joseph Priestley, Josiah Wedgwood and William Withering, as well as members who are generally less well-known: Thomas Day, Richard Lovell Edgeworth, Samuel Galton junior, Robert Augustus Johnson, James Keir, William Small, Jonathan Stokes and John Whitehurst.

"The members," says Joseph Priestley, "had nothing to do with the *religious* or *political* principles of each other; we were united by a common love of *science*, which we thought sufficient to bring together persons of all distinctions—Christians, Jews, Mahometans and Heathens, Monarchists and Republicans."[2] In politics, however, the trend of opinion of the members was on the whole to the "Left," in that both the American revolt and the French Revolution were hailed enthusiastically by most of them. Darwin, Day, Priestley and Withering were notable opponents of slavery and the slave trade.

The interests of Lunar Society members covered an astonishing range: chemistry, botany, geology, engineering, medicine, instrument making, exact measurement, pottery making, chemical manufacturing, assaying, colour, electricity, canals, roads, balloons, education and history. The members of the Society were unusually distinguished. Eleven of them became members of the Royal Society, which '...probably represents the highest concentration of Fellows of the Royal Societies that has been associated at one time with any industrial undertaking.' [3]

The Lunar Society was a microcosm of the Industrial Revolution. It was a supreme example .of fruitful relations between science and technology. In its 40-odd years of existence it exerted an immense influence on the technology and industry of the whole of Western Europe and the newly independent States of North America. Members filled their long lives with achievement and they were universally known and respected in scientific and lay circles.

Members met informally at each other's houses for dinner every month, on the Monday nearest the full moon, in order to have the benefit of its light in returning home. Hence the name Lunar Society. The members were accustomed to sit down to dinner at two o'clock, and did not part until eight; exchanging views with each other on topics relating to literature, science, and arts, each contributing his quota of entertainment and instruction. Ideas were developed, theories expounded and knowledge extended. They discussed recent scientific books, conducted scientific experiments on electricity and chemistry, and paid for operators to conduct those experiments, Many of the members corresponded with famous scientists throughout the world and often these great men of the period attended Lunar Society meetings as guests. Matthew Boulton, for instance, engaged in extensive friendly correspondence with Benjamin Franklin on matters of scientific theory as well as purely practical matters of technology.

It was left to an American professor, Robert E Schofield, to fully chronicle this illustrious

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1 Hesketh Pearson. *Doctor Darwin.* London & Toronto: Dent & Sons, 1930. p.99.

2 John Towill Rutt. *Life and correspondence of Joseph Priestley*. London: R Hunter, 1832. Volume 2 p.210.

3 Archibald Clow and Nan L Clow. *The Chemical Revolution*. Batchworth Press, London: 1952. pp.611-15.

body.[4] Extracts from the foreword elegantly encapsulate reasons for the Society's enduring worth:

> More than any other single group, the Lunar Society of Birmingham represented the forces of change in late-eighteenth-century England, for the Lunar Society was a brilliant microcosm of...provincial manufacturers and professional men who found England a rural society with an agricultural economy and left it urban and industrial.
>
> Together they comprised a clearing-house for the ideas which transformed their country materially, socially and culturally within a generation. They were men of broad interests and their discussions ranged widely, but their major mutual interest was the sciences, pure and applied—particularly as applied to the problems of industry... these men were the harbingers of the Industrial Revolution.

I have the author's copy of his Harvard University doctoral thesis, with his own annotations, on the origins of the Lunar Society [see image].[5] Much of the material was incorporated into *The Lunar Society of Birmingham* his *magnum opus* of 1963. It stands as a landmark in the history of science.

3. An Explosion of Interest

Over the last twenty or so years there has been an incredible flurry of activity relating to the Lunar Society of Birmingham: the restoration of Soho House and its opening to the public;[6] the recent publication of a major book by Jenny Uglow;[7] the setting up of a new Lunar Society of Birmingham;[8] the Boulton-Watt archives finally catalogued;[9] the micro-filming of much of the archives for world-wide dissemination;[10] the James Watt auction sale at Sothebys[11] and the superb *Revolutionary Players* website which allows access to digitised material from libraries, museums and archives across the West Midlands region relating to the development of the Industrial Revolution and significant individuals who contributed to it. Their focus is on the period 1700 - 1830.[12]

There continues to be a constant stream of books about aspects of the Lunar Society and illuminating the contribution of prominent individual members, such as Boulton, Priestley and Darwin.

This upsurge of interest mimics, in some respects, the refocusing which occurred some fifty years earlier around the time of the two-hundredth anniversary of the first Lunar Society

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4 Robert E Schofield. *The Lunar Society of Birmingham: a Social History of Provincial Science and Industry in Eighteenth-Century England*. Oxford University Press: 1963. p.3. This meticulously researched work by Professor Schofield, a masterful scholar of the History of Science, remains unsurpassed. It is universally recognised as the seminal work on the history of the Lunar Society.

5 Schofield RE. *The Founding of the Lunar Society of Birmingham (1760-1780): organization of industrial research in 18th century England*. PhD Thesis, Harvard University, May 1955.

6 Full information from their website: www.bmag.org.uk/soho_house/

7 Jenny Uglow. *The Lunar Men: The Friends who made the Future 1730-1810*. London: Faber & Faber, 2002.

8 The website of this Birmingham-based organisation is at www.lunarsociety.org.uk. There is also a Lunar Society of similar aims and objectives based in Waco, Texas, with a website at www.oakshire.net/lunarsociety

9 The printed papers of Boulton and Watt are housed in the Archives section of Birmingham Central Library. Their website is embedded in www.birmingham.gov.uk. You should also visit the website of Revolutionary Players, a project supported by the New Opportunities Fund focusing on the history of the Industrial Revolution in the West Midlands in Britain between the years 1700 and 1830. Access their website at www.revolutionaryplayers.org.uk.

10 Available through Adam Matthew Publications Ltd, a scholarly publisher which makes available original manuscript collections, rare printed books and other primary source material on microform, CD-Rom and online. Visit their website at www.adam-matthew-publications.co.uk.

11 This major sale took place at Sotheby's in London in March 2003. It included scientific instruments, books, manuscripts, furniture, silver, pictures, prints, ceramics and works of art. As well as items associated with James Watt, the sale also included important material relating to his son James Watt Junior who lived at Aston Hall between 1819 and 1848. Birmingham Museums and Art Gallery and Central Library were able to acquire a significant quantity of material for the City.

12 Accessible via www.revolutionaryplayers.org.uk. Major funding has ceased for this project and no material has been added since 2009.

meeting. The Herculean research efforts of Professor Robert E Schofield did much to bring the Lunar Society to general attention during this period of frenetic interest in this illustrious body. The events commemorating the bicentenary in 1966 were truly spectacular and show in what esteem the Society was then held.

It was fitting that Birmingham should be central in celebrating the lives of the men who formed the Lunar Society. Their achievements were not only remarkable in themselves, but illustrated the scientific, technological and intellectual quality of British provincial life at the time when Birmingham was first emerging as a great industrial city.

The principal event, an exhibition hosted by Birmingham Museum and Art Gallery, was opened by the President of the Royal Society. It was open between 13 October and 27 November, 1966 and attracted 90,000 people, including many schoolchildren.

It was an exceptionally complex exhibition involving a great many individuals and institutions. Loans were received from the Royal Collection, the Royal Society, the National Portrait Gallery, the Science Museum and a whole host of other prominent museums and organisations. Many descendents of Lunar Society members assisted with loans and help. Never again will such a cornucopia of delights be assembled. The catalogue for the exhibition is a unique source for rarely-seen Lunar Society paraphernalia.[13] The introduction was written by Eric Robinson of Manchester University, the leading authority on the Lunar Society in this country. The rivalry between Robinson and Schofield was legendary.

A room was set aside in the exhibition to try and recreate something of the atmosphere of a Lunar Society meeting, with the table set with Boulton silver lent by the Birmingham Assay Office and Weston Park Museum, Sheffield. Josiah Wedgwood and Sons, Ltd. lent Wedgwood Queensware with convolvulus pattern dating from around 1791.

Another commemorative exhibition was held in the library of the University of Birmingham. *The Lunar Society: An exhibition in connection with the bicentenary celebrations of the Lunar Society of Birmingham* was held in collaboration with the Birmingham Reference Library between October 12 and November 26, 1966. Over 220 books, letters, pamphlets and ephemera were exhibited.[14]

The University of Birmingham also published a commemorative issue of its Historical Journal, with papers on aspects of the Lunar Society from eight distinguished scholars, including Professor Robert E Schofield.[15]

As a memento of the bicentenary a Lunar Society Medallion, two inches in diameter and weighing 70gms, was struck by The Mint, Birmingham, originally the famous Heaton Mint, which purchased the coining presses of Boulton and Watt's Soho Foundry. It was made from Britannia Standard Silver (95.8% pure) and was hallmarked at the Birmingham Assay Office, which Matthew Boulton founded. It sold for 5 guineas. The obverse carried an impression of James Watt's personal seal, which is in the Science Museum, London. The reverse of the Medallion [see image], names the fourteen members of the Lunar Society, no less than eleven of whom belonged to the Royal Society.

The year 2016 will mark the 250th anniversary of the first meeting of the Lunar Society. Given its importance Great Barr Hall *could* take—*ought* to take—a leading role in the celebrations.

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13 Catalogue. *An Exhibition to Commemorate the Bicentenary of the Lunar Society of Birmingham. Birmingham Museum and Art Gallery, October 13th to November 27th 1966*. pp.73.

14 Give reference. *The Lunar Society: An exhibition in connection with the bicentenary celebrations of the Lunar Society of Birmingham* was held in collaboration with the Birmingham Reference Library between October 12 and November 26, 1966. Birmingham 1966. 42pp.

15 *University of Birmingham Historical Journal* Vol. XI No. 1 1967.

4. How Great Barr Became Touched by Genius

Joseph Scott (1752-1828) of Great Barr Hall, created a baronet in 1806, was a legendary spendthrift. He is infamous for having given wings to three fortunes during his lifetime, including a dowry of £2000 received in 1777 on marriage to his cousin Margaret Whitby, younger daughter and heir of Edward Whitby of Shutend, Kingswinford. Shortly thereafter Joseph Scott set in place grandiose plans for turning a modest country estate into a splendid country seat, suitable for receiving his many influential friends. With what amounted to reckless abandon he ran up considerable debts, only avoiding the ignominy of bankruptcy by agreeing to his estates being put in trust for the benefit of his many creditors. Close friends acted as trustees.

At the time of his marriage valuable estates in Perry Barr, Camphill, Erdington, Yardley and elsewhere in the Birmingham area were settled on him by his ageing great-uncle of the same name. This land and property, as well as family hereditaments, were surveyed and valued in minute detail. The final trust conveyance, dated April 1782, is a very complex and lengthy document running to fourteen membranes, each measuring 3 feet by 2½ feet. At the foot are the clear signatures of the *fifty-seven* individuals, mostly tradesmen, to whom he was indebted.

To satisfy this large band of baying creditors Joseph Scott was forced to seek a lessee for Great Barr Hall and its associated parkland to raise revenue. There is also evidence he set up a mortgage with Galton, a banker as well as a gunmaker. A mortgage in those days was equivalent to a modern-day equity release plan, with deeds being deposited as collateral.

Despite being repeatedly marketed over several years there were no takers for the property, until Samuel Galton Jnr showed interest in the mid-1780s. Thus it was that Great Barr Hall, then newly enlarged and remodelled, came to be leased for a term of 99 years to Galton, a fabulously wealthy gunmaker and banker, then living at Duddeston.

As it turned out, Joseph Scott's self-inflicted penury inadvertently assured a permanent place in history for this mansion and its spectacular landscape, for Samuel Galton Jnr was a central figure in that most celebrated group of inventors, scientists and free thinkers—the Lunar Society of Birmingham. By good fortune Galton's time at Barr happened to coincide with the golden years of this intellectual galaxy.

His finances now under control, Joseph Scott retreated to the Continent on the Grand Tour, later taking up residence in Boulougne.

5. The Galton Family at Barr

What was it that brought Samuel Galton Jnr and his family to Great Barr Hall in the 1780s? They were actually the most pedestrian of reasons: a need for more space—the family had expanded—and a desire to live in a more convivial location than their home at Five Ways. This last property had been acquired in 1782 and was no more than:

> ...a suburban villa, in a sort of straggling row, in which gentlemen's houses, cottages, trees and fields promiscuously found place. ...our party being increased, my father took a house belonging to an artist, a Mr. Miller, which immediately adjoined our own. A doorway of communication was opened through the offices. This addition gave my father two rooms below for his laboratory and philosophical apparatus, and the younger children and the *bonne* nurseries above.' *The Barr Chronicles* p15 & 12

Lucy Galton[16] had recently given birth to twins and there were already three other children: two girls and a boy. Galton and his wife would still have been grieving over the recent loss of another

16 There is an absurd tale in the first edition of Cassell's History of England, only referred to here in case anyone should ever revive it, that Lucy Barclay was a daughter of George III and Hannah Lightfoot, a young Quakeress.

daughter, a 3-year-old toddler, and their first-born infant son a few years earlier. Three more children were to be born to the Galton's during their time at Barr.

The Galton's search for another residence happened to coincide with the frantic attempts of Joseph Scott (1752-1828), then the owner of Great Barr Hall, to resolve his crushing financial difficulties.

6. Bounding Dates Now Settled

We are told that Galton, on his move to Barr, bought cows and followed agricultural pursuits, quite apart from his other activities. In the winter months the family would return to Birmingham.[17]

There has long been speculation as to the exact period during which the Galton family were in residence at Barr. The uncertainty is understandable when you consider the conflicting dating evidence.

Firstly, amongst the Galton Papers deposited with Birmingham City Archives is the actual Galton lease to the Netherhouse. That was the name by which the property was then known, to distinguish it from nearby Old Hall Farm, once another ancestral home of the Scotts. The parties to the lease were Joseph Scott, Mary Scott (his mother), Samuel Galton Jnr and William Bird. This document is dated 1786, whereas in ***The Barr Chronicles*** Mary Anne Schimmelpenninck maintains the Galton family moved to Barr in 1785.

On the reverse of the lease is an endorsement declaring the repayment in 1793 of Joseph Scott's mortgage with Samuel Galton Jnr.

Secondly, Joseph Scott's financial troubles effectively came to an end in 1791, on the death of Thomas Hoo, Lord of the Manor of Great Barr and Wednesbury. Hoo lived at Old Hall Farm, the half-timbered building close to Beacon School. This inveterate bachelor owned most of the township of Great Barr, as well as considerable property in Wednesbury and elsewhere in the Black Country, including a productive coal mine at Bradley, near Bilston. His heir-at-law had to be discovered and, after much deliberation, it was declared that two distant relatives were joint co-heiresses: Mary Whitby, Joseph Scott's mother-in-law, and the Hon. Eliza Mary Foley Foley [sic], wife of the Hon. Edward Foley, of Stoke Edith, Herefordshire. Each held a moiety (equal half share) of all that the late Thomas Hoo had owned. Joseph Scott would have been allowed to administer the newly-gained fortune of his widowed mother-in-law "in right of wife" according to the prevailing law.

Final legal confirmation was held up for a considerable time after the Rev John Wylde, Rector of Aldridge, submitted a will which appeared to make him sole beneficiary to Thomas Hoo's estates. An Ejectment Cause was initiated to remove the co-heiresses and the case came before Stafford Assizes in March 1792. However, it was proved by a papermaker that the will was a forgery, since it was written on paper which had been manufactured by him long after the date on the document.

It was widely assumed that this unexpected return to affluence for the Scotts resulted in the Netherhouse lease being determined in 1792 or 93 and the return of the family to their ancestral home. This was reinforced by the aforementioned 1793 endorsement on the back of the lease.

When the bulk of my local history research on the Scotts and Great Barr Hall took place—between the 1970s and 90s— indirect indicators of occupancy amongst local records, such as the Poor Law levy, were not available for consultation. In those days parish records were often still retained in traditional parish chests kept in church vestries. Unfortunately, that was the case with Great Barr—and the incumbent at that time did not allow access to the *hoi polloi*.

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17 Karl Pearson. The Life Letters and Labours of Francis Galton. Cambridge University Press, 1914. v1 p46.

This reluctance to assist bona-fide researchers also extended to other local history material in his keep.

Fortunately, within recent times, these parish records have been deposited with Staffordshire County Record Office. They are now stored under optimum conditions and freely available for public consultation.

This newly-deposited source contains two Poor Law levy books of particular interest.[18] Basically, these ledgers record compulsory quarterly payments of the poor rate, a tax on property which was used to provide poor relief for the parish poor. The tax was collected by locally-elected Overseers of the Poor.

The first of these levy books, started on 5 August 1791, shows a quarterly payment of £1-12-0 against the name of Samuel Galton Jnr without break until 3 March 1797. This is wonderful news, since it extends by some four years the period during which the Lunar Society was thought to have met at Great Barr Hall.

That settles the end date, but when did the Galton family actually move to Barr? Was it 1786, when the lease was signed, or 1785 as stated by Mary Anne Schimmelpenninck?

Unfortunately, no records of Land Tax Assessments for the year 1785 survive for anywhere in the county of Staffordshire. Perusal of the entries for Great Barr would have settled the issue instantly.

Nevertheless, it has been possible to come up with a definitive date from a trawl of published correspondence between Lunar Society members. We now know the Galton's were in residence at Barr before 20 September 1785 from the date of a letter sent by Watt to Boulton. For whatever reason the Netherhouse lease was not signed until 1786, after the Galton's had moved in—Mary Anne's date of 1785 was correct after all! Here is a passage from that crucial letter:[19]

"The Lunar Society was held yesterday at Mr. Galton's, at Barr. It was rather dull, there having been no philosophical news lately, except Mr. Kirwan's discovery of an air from phosphorus, which takes fire of itself on being mixed with common or dephlogisticated air."

How much more stimulating that meeting would have been had the production of this gas been demonstrated! Phosphoretted hydrogen, also known as phosphine (PH_3), is a colourless, spontaneously-inflammable, highly-toxic gas with a fishy or garlic-like odour. It rapidly produces faintness, vomiting, headache and tightness of the chest. Even short exposure to an acute amount can lead to chronic neurological problems.

7. Lunar Society Illuminati at Barr

The Galton's time at Great Barr Hall—1785 to 1797—was the heyday of the Lunar Society. The Barr Period, as we shall call it, coincided with the Society's most productive era. There are numerous publications by members during these years which confirm this statement.

This newly-refashioned mansion, during the Barr Period, was a port of call for absolutely anyone passing through the Midlands with important views to express. It was a veritable clearing-house for the ideas and scientific theories that were fashioning this country at the dawn of the Industrial Revolution. The Galtons were genial hosts and nurtured the widest possible circle of friends and acquaintances.

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18 SRO D568/A/PO/10-11. *Poor Relief Assessments* 1791-1836.

19 Bolton HC (Ed.). *Scientific correspondence of Joseph Priestley*. New York: Privately printed, 1892. p.207. Richard Kirwan FRS (1733-1812) was an Irish scientist active in the fields of chemistry, meteorology, and geology. He was widely known in his day and frequently corresponded with Priestley. The previous year he had published his Elements of Mineralogy, the first systematic book written in English on the subject. He was President of the Royal Irish Academy for over a dozen years.

We are so fortunate that the Galton's time at Barr was chronicled: Mary Galton's book is replete with references to people of influence who stayed as guests. The Galton's were Quakers and had no liking for the pretentious—rank and money counted for nothing in their circle:

> No one saw at Barr the least difference made on account of rank, or riches, or fashion, though often, I am sorry to add, they might on account of intellect. Our table, dress, and equipages were precisely the same when we sat down to dinner a family party of fourteen, as when we had ten or twenty guests—with the simple difference of the necessary additional quantity. *The Barr Chronicles* v1 p30

We are informed in an important book on that Victorian genius Sir Francis Galton FRS (1822-1899), published just before the First World War, that Great Barr Hall was actually ***'The favourite meeting place of the Lunar Society.'*** [20] These remarks were penned by his sister, Elizabeth Anne Galton (1808-1906), in a curious MS account of the Galton Family put together over an extended period from diary entries, preserved correspondence and other family papers, including watercolours, photographs and drawings. This lady was blessed with a naturally retentive memory and was the grand-daughter of ***two*** members of the Lunar Society: Samuel Galton Jnr and Erasmus Darwin. She was clearly well placed to comment on the Galton family's time at Barr.

In addition, we have it on good authority that Great Barr Hall ***'after Boulton's house, became the most frequent meeting place for the Lunar Society.'*** [21]

This illustrious body kept no records: there was no contemporary Boswell to chronicle their erudite exchanges. ***The only eye-witness accounts*** of their meetings comes from the autobiography and biographical sketch of Galton's eldest daughter, Mary Anne Schimmelpenninck, published by a relative two years after her death.[22] For brevity this two-volume work will be referred to throughout this publication as *The Barr Chronicles*.

Mary Anne's vivid descriptions of members of the Lunar Society and life at Barr (she was a very accomplished writer), have never received proper recognition. A pamphlet highlighting passages from the autobiography [will be included as an appendix].[23] The editor, Richard Woodall, was clearly ignorant of Mary Anne's superb body of work. The present author is engaged in editing a full-length reprint of the original work for possible publication.

It is self-evident that Great Barr Hall, on its Lunar Society connections, stands just one step behind Soho House, that living monument to the memory of Matthew Boulton, now sadly landlocked and struggling against its environs.

8. The Lunar Society Epoch at Barr

Mary Anne's vivid descriptions of members of the Lunar Society at Barr are of inestimable value to all historians and researchers of this intellectual galaxy. Her well-crafted vignettes stand entirely alone in the literature and tell us so much about the personal characteristics of these outstanding individuals.

For many years I have been collecting piecemeal the original published books of Lunar Society members, chiefly those works which have a particular relevance to the Barr Period of the Society's history (1785-1797). As you might imagine, some of the items are excessively rare and very valuable. Many were printed and published in Birmingham. It was always my

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20 Karl Pearson. *The Life Letters and Labours of Francis Galton*. Cambridge University Press, 1914. Plate XXXI.

21 Barbara and Hensleigh Wedgwood. *The Wedgwood Circle: Four Generations of a Family and Their Friends*. London: Studio Vista, 1980.

22 Christiana C Hankin (Ed). *Life of Mary Anne Schimmelpenninck*. London: Longman, Green, Longman and Roberts, 1858.

23 Richard D Woodall. *Mary Ann [sic] Galton of Barr Hall and Birmingham*. Sutton Coldfield: Norman A Tector, 1953.

intention that these iconic books, together with a great wealth of other collected material, particularly illustrated items and ephemera, should be made available to promote and enhance any restoration scheme for Great Barr Hall. There are a couple of provisos: the Lunar Society connections would have to be fully exploited and restoration would need to concentrate on the Georgian phase of the buildings architectural evolution.

There follows a series of portraits of Lunar Society members, embellished with remarks made by Mary Anne in *The Barr Chronicles*. These passages are illustrated, wherever possible, with title-pages from their published works, all of which form part of my Great Barr Hall Collection. The order in which individuals are listed does not reflect their importance in Lunar Society history and is more to do with their impact during the Barr Period.

SAMUEL GALTON Jnr

Samuel Galton Jnr FRS FLS (1753-1832) came of prosperous Birmingham Quaker stock and could have lived on inherited wealth had he wished to do so. He took over the family gunmaking business, but later moved into banking. His manufacturing activities eventually caused him to be disowned by the Society of Friends. He was largely a self-taught scientist and assembled an extensive collection of scientific instruments. His most important and original work was in the study of colours, although he was also interested in canals and later spent much time experimenting with fruit-trees. He proved with the aid of a colour top that Newton's seven colours of the spectrum were really only three primary colours: blue, yellow and red.

Much of what we know of Samuel Galton Jnr is derived from the memoirs of his daughter, Mary Anne, published in *The Barr Chronicles*.

Ingenious Colour Experiments

Galton's interest in science dates from his time at Warrington Academy, where he met Joseph Priestley. In 1782-83 he added two rooms to the original family home at Duddeston for a laboratory. He seems to have first attended meetings of the Lunar Society in July 1781 and continued right through until 1803. Intellectually, his most productive years were those he spent at Barr between 1785 and 1797, the peak years of the Lunar Society:

We know that Galton continued to increase his collection of scientific instruments whilst at Barr, including a reflecting telescope by Watson in 1786 and a camera obscura in 1789:[24]

> We had many interesting visitors at Barr. My father was a man of superior intellectual endowments; he had much taste for the exact sciences, in which he was eminently skilled. He was often deeply occupied in courses of experiments on optics and colours, and also on electricity and chemistry. He had long been a member of the Royal Society, and was one of the earliest members of the Linnæan Society. These tastes led to an intercourse with others of the like pursuits. *The Barr Chronicles* v1 p37

Galton can truthfully be said to be the originator of the idea of the three primary colours—red yellow and blue—which, when mixed together, produce white. In 1782, he sent a paper to the Royal Society on "Experiments on the Prismatic Colours" via his friend, Joseph Priestley, in which he demonstrated by a series of ingenious experiments that all varieties of colour may be formed by various modes of combination using circular cards on a spinning top. In particular, he shows that if the seven prismatic colours are drawn on a circle and then mixed "...by making the circle revolve swiftly round its centre, they compose white." In the normal course of events Galton's paper would have been published in the prestigious *Transactions of the Royal Society*, but that did not happen, possibly because Galton requested anonymity. It was not until August 1799 that this landmark paper was published by Galton in the rather obscure and much less

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24 Karl Pearson. *The Life Letters and Labours of Francis Galton*. Cambridge University Press, 1914. v1 p47.

prestigious *Monthly Magazine* [see image].

Galton's work did receive one airing in the interim period—from a fellow 'lunatick'. The highly-original experimental work on primary colours 'By my ingenious friend, Mr. Galton of Birmingham' was given some prominence in Erasmus Darwin's epic poem *The Botanic Garde*n, published in 1791. This relatively obscure mention is unlikely to have been picked up by mainstream scientists. Darwin pointed out that: "It is probable that many of the unexpected changes in mixing colours on a painter's easel, as well as in more fluid chemical mixtures, may depend on these principles [discovered by Galton] rather than on a new arrangement or combination of their minute particles." Darwin could see practical benefits for "the copper-plate printers of callicoes and papers in colours." [25]

Galton's important discovery in the field of light and colour was forgotten, or ignored, and later assigned to someone else. The original invention of the so-called Young-Helmhotz-Maxwell colour-top is credited to Thomas Young chiefly on the basis of a statement made in 1807 in his *Course of Lectures*. Young almost certainly knew of Galton's work on the colour-top, but claimed the invention as his own. Plagiarism is nothing new amongst academics!

Pioneer of Children's Literature

Children's literature only emerged as a distinct and independent genre in the late eighteenth-century. Before then children's reading was generally confined to literature intended for their education and moral edification, rather than for their amusement. Illustration played a relatively minor role, usually consisting of small woodcut vignettes or engraved frontispieces created by anonymous illustrators.

Shortly after moving to Barr, Samuel Galton Jnr published anonymously in 1786 the first part of a charming little natural history book on ornithology for children, full of well-drawn engravings, which was the first of its kind. He saw it as a way to keep his ever-increasing brood entertained, whilst at the same time imparting knowledge.

This three-volume work was entitled *The Natural History of Birds, containing a variety of facts selected from several writers, and Intended for the Amusement and Instruction of Children* [see image]. Text was compiled from Linnaeus, Buffon, Pennant, Latham, White of Selborne, and other writers. It was arranged according to order, genus and species, with brief descriptions and discussions of habitat. It contained 116 exquisite hand-coloured copper-plate engravings. It was the only 'natural history' study to be published by any Lunar Society member and was well received by critics.

Galton later wrote another early work for children, also anonymously, which has been totally overlooked by Schofield and all other Lunar Society researchers. His *Natural History of Quadrupeds*, a two-volume work, was published in 1801. It is an excessively-rare book: only one copy is recorded in WorldCat, which draws together the holdings of the world's national, academic and specialist libraries.

The publishing history of Galton's two titles, *Birds* and *Quadrupeds*, is remarkably complex. I have laboured long and hard on an extended 5,000-word article in an attempt to unravel some of the mysteries of these fascinating publications, compiled during the Barr Period. It is available as a pdf file.

Galton's interest in education led him to become a chairman in 1808 of the Lancastrian School in Birmingham which became a great success. He was also involved in canal promotion in the 1770s and 1780s. In 1817 he published a paper 'On Canal Levels'.

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25 Erasmus Darwin. *The Botanic Garden: a poem, in two parts. Part I. containing the Economy of Vegetation. Part II. The Loves of the Plants. With philosophical notes*. London: J. Johnson, 1791. Additional Notes to the Economy of Vegetation. Note 2, p6.

WILLIAM WITHERING

William Withering MD FRS FLS (1741-1799) was the son of an apothecary of Wellington, Shropshire. He studied medicine at Edinburgh University and was awarded an MD in the session 1765-66. He came to Birmingham in 1776 on the recommendation of Erasmus Darwin following the death of Dr William Small, a much valued early member of the Lunar Society. In 1779 Withering became chief physician at the newly-opened General Hospital, Birrmingham, built by public subscription. He held this position for 13 years and was in the habit of holding a daily clinic for the poor seeing about ten patients a day (2000 to 3000 annually) without charge. This benevolence almost certainly resulted in him acquiring a tuberculosis infection. He moved to Edgbaston Hall in 1786 where, after years of suffering, he finally died from the ravages of the disease.

A man of wide-ranging talents and interests, Withering was one of the ablest clinicians of his day and one of the most famous men in Europe. Despite his medical work, Withering found time to follow a number of other pursuits: he was a mineralogist, climatologist, inventor, cattle breeder, accomplished musician, and botanist.

A Milestone in Medical Science

The start of the Lunar Society period at Barr was marked by the publication of William Withering's landmark in the history of pharmacology: *An account of the foxglove, and some of its medical uses*. This celebrated book, printed in Birmingham by Myles Swinney, was the result of ten years detailed research using leaves of the foxglove *Digitalis purpurea* in the treatment of congestive heart failure (dropsy) [see image]. It is a brilliant example of clinical investigation and rightly stands as one of the first modern clinical studies of a drug.

Prior to Withering digitalis had notorious side-effects in use. Withering accurately described the signs and symptoms of toxicity and established clear guidelines for its rational use. His painstaking methodology shows through in every page of this delightful little book, even down to the inclusion of a large folding hand-coloured engraving of the plant in all its aspects. Only in the past few decades has the real merit of Withering's work on the foxglove been properly recognised.

A decent copy of this highlight in the history of medicine will set you back £10,000—it originally sold for five shillings (25p)!. I have a facsimile copy of the work [see image], beautifully bound in red calf with all edges gilt.

'The English Linnaeus'

William Withering was also the first scientist to meticulously classify British plants according to the binomial nomenclature invented by the eminent Swedish botanist and physician Carolus Linnaeus (1707–1778). This system is familiar to all serious gardeners and botanists and has never been superseded. Withering describes places of growth, time of flowering, economic uses as drugs, poisonous properties, methods of botanical investigation and preservation of specimens. He also invented two types of pocket microscopes, now very collectable, for use on botanical field trips.

The first edition of Withering's work, published in two volumes in 1776, was little more than a translation of the portions of Linnaeus's writings relevant to English botany.[26] It quickly became the standard work on English botany and was used by many of the great nature poets. William Wordsworth was an admirer of Withering's work, as were John Keats and John Clare.

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26 William Withering. *A botanical arrangement of all the vegetables naturally growing in Great Britain*. With descriptions of the genera and species, According to the System of the celebrated Linnaeus. Being an Attempt to render them familiar to those who are unacquainted with the Learned Languages. Under each species are added, The most remarkable Varieties, the Natural Places of Growth, the Duration, the Time of Flowering, the Peculiarities of Structure, the common English Names; the Names of Gerard, Parkinson, Ray and Bauhine. The uses as medicines, or as poisons; as food for Men, for Brutes, and for Insects. With their Applications in oeconomy and in the arts. With an easy introduction to the study of botany. Shewing The Method of investigating plants, and Directions how to Dry and Preserve Specimens. The whole Illustrated by Copper Plates and a copious Glossary. Birmingham : printed by M. Swinney, for T. Cadel and P. Elmsley in the Strand, and G. Robinson, in Pater-Noster-Row, London, MDCCLXXVI [1776]. In 2 volumes.

I have a copy of the first edition of this landmark botanical work once owned by Walter Radcliffe (1733-1803) of Warleigh (sometimes known as Warlegh) House, near Plymouth [see image]. His field observations for the years 1785-86 are tipped in at the beginning of each volume. Radcliffe was the archetypal eighteenth-century gentleman, making the Grand Tour of Europe, maintaining a house in London, and sitting twice for Sir Joshua Reynolds.

As Withering acquired more botanical experience his *Arrangement of British Plants* became increasingly based on his first-hand observations.[27] Two more editions of this work were published in 1787/1792 and 1796, in collaboration with fellow Lunar Society member Jonathan Stokes. To aid his research the author retained two persons, whose sole business it was to traverse the country to collect specimens. He made every possible effort to bring this, his *magnum opus*, to perfection.

In the third (and best) edition during his lifetime—all early editions are Birmingham imprints—Withering effected a number of important taxonomic changes in the Linnaean system. I have a superb flame-red calf copy of this 1796 4-volume work in fine condition. It stands as the first complete scientific classification and description of British plants in the English language. It was described at the time as "...the most elaborate and complete National Flora of which any country can boast".[28]

After Withering died his son, also William, published four more editions. This seminal work continued to be published under various authors until 1877. Amazingly, it was in print for over a century! Understandably, Withering became known on the continent of Europe as 'The English Linnaeus'.

Withering also wrote a book in 1779 on the scarlet fever epidemic which swept through Birmingham during the previous year. He described in detail the epidemic of scarlet fever and postulated that it was infectious in aetiology. His contribution was sufficiently appreciated to be translated into German (1781). I have a copy of the rare second edition published in 1793 [see image],[29] which is sure to have been discussed at Lunar Society meetings during the Barr Period.

Withering's medical achievements are honoured to this day. His memory is perpetuated in the William Withering Lectures at Birmingham University Medical School and the William Withering Chair in Medicine. A William Withering Prize is awarded triennially by the Royal College of Physicians.

I also have in my possession William Withering's own signed copy of Caelius Aurelianus: *De Morbis, Acutis et Chronicis* [of Acute and Chronic Diseases], published in Amsterdam in 1722. Caelius Aurelianus is considered the most famous Graeco-Roman doctor after Galen and this textbook would have assisted Withering in his earliest medical studies at Edinburgh University. It was recently bought from the much-criticised dispersal sale of the fabulous library of the Birmingham Medical Institute.

Withering at Barr

Furthermore, Withering was the first scientist in the world to classify the cryptogamia (non-flowering plants such as fungi and algae) by the Linnaean system, publishing this work in 1792 as the much-delayed third volume to the 1787 second edition of his *Arrangement*. I have an

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27 Note the subtle change of title for the second and subsequent editions. The word 'Vegetables' was used in the title of the first edition in its literal meaning as 'plants of all description' rather than its now common usage as 'plants cultivated for food'.

28 *Annals of Medicine*. 1799 v4 p529.

29 William Withering. *An account of the scarlet fever and sore throat; or scarlatina anginosa: particularly as it appeared at Birmingham in the year 1778*. The second edition. To which are now prefixed, some remarks on the nature and cure of the ulcerated sore throat. Birmingham: printed by M. Swinney; for G. G. & J. Robinson, Paternoster Row, London, MDCCXCIII. [1793]

uncut, partially unopened copy of this milestone in the history of mycology, still in the original pale-blue boards as issued [see image]. It is a real rarity—a book collector's dream. **There are at least a dozen annotated references in this landmark publication to specimens of fungi collected on the Great Barr Hall Estate.**

This third volume was an immense labour for Withering, as witness this letter dated 22 January 1788 to John Coakley Lettsom (1733-1810), physician and founder of the Medical Society of London, the oldest medical society in the United Kingdom:

Upon the subject of the Med[ica]l Society . . . To our Society, or rather yours I shall not fail to pay a particular attention, but untill the 3d. Vol. of the Botanl. arrangement is printed I cannot spare time to send you anything worthy the attention of the Society. The laborious attentions necessary in a work like mine are truly incompatible with any other engagements . . ." [30]

William Withering was also the first scientist to attribute the formation of fairy rings to a fungus. After describing Agaricus oreades in the second edition of his *Systematic Arrangement of British Plants* (1792) he writes, "I am satisfied that the bare and brown, or highly clothed and verdant circles, in pasture fields, called Fairy Rings, are caused by the growth of this Agaric." He mentions that the rings are of several sizes, the largest eighteen feet in diameter, with about as many inches broad in the periphery where the fungus grows. Spawn of the fungus occurred under the surface of the soil where the ring is brown and almost bare, "but where the grass has again grown green and rank, I never found any of the spawn existing." Withering's opinion soon came to be generally accepted by botanists.

Mary Anne made a number of astute observations on William Withering, for whom she and her siblings collected specimens for his landmark publication on the classification of fungi. I sometimes wonder if they really confused the great botanist with their playful pranks:

To this society also belonged the celebrated Dr. Withering, distinguished alike in botany and medicine; and of whom it was said, years afterwards, when his life was terminating by a lingering consumption, "The Flower of Physic is indeed Withering." *The Barr Chronicles* v1 p37-8

He was the personification of that which belongs to a physician and a naturalist; enormous were his organs of proportion and individuality,[31] and great were his powers of active investigation and accurate detail. His features were sharpened by minute and sagacious observation. He was kind, but his great accuracy and caution rendered his manner less open, and it had neither the wide popularity of Mr. Boulton's, nor the attraction of Mr. Watt's true modesty. When Dr. Withering was writing his work on Fungi, it was often the occupation and interest of our walks as children to search for the curious species in which the woods of Barr abounded; but as it was expected we should bring some new specimens almost daily (which was no easy task), and as my father happened to be showing us experiments with various acids and alkalies in solutions of metals, we often amused ourselves by painting over the fungi in sundry methods in order to increase our variety and puzzle the doctor, and it was not till long after that we told him of our misdeeds. v1 p43-4

JOSEPH PRIESTLEY

Joseph Priestley LLD FRS (1733-1804) was the Lunar Society's most illustrious member: a chemist, philosopher, dissenting clergyman and educator. He came to Birmingham in 1780 on his appointment as junior minister to the Unitarian New Meeting House. In early life he studied six ancient and three modern languages. His name is chiefly associated with chemistry, particularly that part which deals with the nature and composition of gases, then called 'airs'. He discovered around twenty new gases including oxygen (most famously), nitric oxide, hydrogen chloride, ammonia, nitrous oxide, sulphur dioxide and carbon monoxide.

Priestley was known as the father of pneumatic chemistry. He was a tireless, skilled experimenter and did more than anyone else to provide evidence for the correct interpretation of the part played by the atmosphere

30 Letter preserved at the Wellcome Library, London. MS3245/.5370.

31 Mary Anne was a devotee of phrenology and physiognomy, hence these observations.

in the life of man, animals and plants, particularly in processes like burning and respiration. It was during his time in Birmingham that most of his chemical discoveries were made.

That celebrated English chemist and inventor Sir Humphry Davy had no doubt about Priestley's contribution to science, 'Chemistry owes to him some of the most important instruments of research, and many of her most useful combinations, and no single person ever discovered so many new and curious substances.'

Joseph Priestley's most important scientific texts are the six volumes of his *Experiments and Observations on Different Kinds of Air* (1774–86). I have the later 1790 edition, printed in Birmingham during the Barr Period, which was his definitive statement on pneumatic chemistry, "Being the former six volumes abridged and methodized, with many Additions." My three volumes are bound in silk-covered boards and are in absolutely fine condition [see image].

Besides his works on chemistry Priestley wrote over a hundred other books and pamphlets on a wide range of subjects including electricity, English grammar, history, theology and metaphysics. To increase output he took to writing his manuscripts using the shorthand system of Peter Annet, which he learned at school. His bibliography by Pardoe.[32]

The outbreak of the French Revolution in 1789 caused political strains between members of the society, but it was the so-called 'Church and King' riots of 1791 in Birmingham itself that saw a decisive falling off of the society's spirit and activities. Joseph Priestley himself was driven from the town, leaving England entirely for the United States in 1794.

Joseph Priestley and his wife were close friends of the Galtons and frequent visitors at Barr. Priestley reckoned his time in Birmingham as the happiest years of his life. He had the convenience of good workmen of every kind, and the society of persons eminent for their knowledge of chemistry:

...the friendship of [Samuel Galton, Jnr] has added much to the happiness of my situation here [in Birmingham]. Seldom, if ever, have I known two persons of such cultivated minds, pleasing manners, and liberal dispositions, as he and Mrs. Galton. The latter had the greatest attachment imaginable to my wife.[33]

The frequent social intercourse between the families at Barr allowed Mary Anne to make many perceptive observations of Priestley and his wife:

Another, and, though mentioned last, not the least valuable of these friends [at Barr], was Dr. Priestley, the father of discoveries on air; a man of admirable simplicity, gentleness, and kindness of heart, united with great acuteness of intellect. I can never forget the impression produced on me by the serene expression of his countenance. He, indeed, seemed present with God by recollection, and with man by cheerfulness. *The Barr Chronicles* v1 p37-8

Dr. Priestley was eminent for his social talents; and one thing I here wish to observe. He sometimes, I believe, has been thought sharp in his expressions in controversy; but those who knew him well, fully understood him in this respect. A sharp and acute intellectual perception, often a pointed, perhaps a playful expression, was combined in him with a most loving heart. v1 p138-9

[My mother (Lucy Galton)] was far too unwell to take any part in her family; and though progressing, she needed the healthful solace and support of a wise and kind friend. This friend she found in Mrs. Priestley. Hers was the only close friendship I ever knew my mother to form. It began in the aid and help this excellent lady afforded my mother in her illness; nor has it ever been my lot to witness any friendship more powerful, more uninterrupted, and more influential. v1 p83

The deep friendship that existed between the Galton and Priestley families is nowhere better displayed than in the following letter written from Barr by Samuel Galton Jnr at the time of

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32 Ronald E Crook. *A bibliography of Joseph Priestley*, 1733-1804. London: Library Association, 1966.

33 *Memoirs of Dr. Joseph Priestley, to the year 1795, written by himself*. Northumberland [Pennsylvania]. 1806. p.95.

the exceptional crisis engendered by Joseph Priestley's support for the French Revolution. The original is preserved in Warrington Museum. Priestley was forced to flee for his life to London after rioters destroyed his residence and its contents, including his valuable library and scientific equipment. In the letter Galton tries to induce Priestley to attend a meeting of the Lunar Society at Barr. In the event he failed to attend and eventually left England for the United States in 1794, never to return: [34]

Dear Sir

I have this moment only received your favor by Mr Wm Priestley & rejoice most sincerely in the idea of seeing You.

If You incline to come to Birmingham which I think much better & more honorable pray inform me the hour you expect to arrive, and where, for I will meet you at the Coach, & accompany you in your perambulation about the Town, Happy in an occasion to avow the most explicit attachment to a Person whose Friendship does me the greatest honor. If you leave the Coach at what was once your house I will meet You there. It never shall be said that Dr Priestley was not received with open Arms by one on whom he has conferd just Obligations. The idea I Fear Mrs Galton & myself equally despise, nor do we really think there is any danger - but if the Alternative were that we should lose our house, or our Esteem for ourselves, we would pause for one moment.

Our lunar Meeting will be held on Monday at Barr will that influence You to leave London any sooner. The inveteracy of the High, or in the literal sense the low Church, here is I fear such as to preclude all Idea of Reconciliation Yet I believe Administration sincere, & I do earnestly hope that no ground of Offence may [be] given them in your Appeal & as for the malignant Spirits here & in the Church I would break them with silent Contempt but not with Resentment wch will do them too much honor.

I am in haste for the post very affectionately yrs

S Galton

Monday Sep 5 1791

[Images of Mrs Priestley and of Samuel Galton Jnr from Karl Pearson.]

ERASMUS DARWIN

Erasmus Darwin MD FRS FLS (1731-1802) was the most colourful member of the Lunar Society. He was educated at Cambridge and Edinburgh Universities, and after qualifying as a doctor he settled at Lichfield in 1756. He was physician, engineer, chemist, botanist and poet, and a pioneer of the canals which transformed the industry of the Midlands. His notes and correspondence cover a wide field. He was always of an inventive turn of mind—all his life he designed mechanical devices—and this gift endeared to him to other members of the Lunar Society, particularly Boulton. His literary works achieved great popularity in their day, but after a few years they sank into almost complete obscurity.

Darwin was much sought after as a physician and was family doctor to the Galtons. He was asked by George III to become the Royal Doctor, but preferred to stay where he was. He presaged the evolutionary views of his grandson, Charles Darwin, author of The Origin of Species.

Darwin was one of the most vigorous members of the Lunar Society and until 1781, when he moved to Derby, he attended meetings regularly. He is unlikely to have attended any meetings of the Lunar Society at Barr, but he came on a number of occasions as family physician. Mary Anne

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34 John F Marsh. On some correspondence of Dr Priestley, preserved in the Warrington museum and library. Transactions of the Historic Society of Lancashire and Cheshire. 1855 v.7 p.65-81. Letter reproduced in Karl Pearson. Life and Letters of Francis Galton. Cambridge University Press, 1914. v1 p44. This is my more accurate transcription, taken directly from a photocopy of the Warrington letter.

paints a superb word picture of her first encounter of Erasmus Darwin in *The Barr Chronicles*. We are told that members of the Galton family were greatly put out by her portrayal of the great man, particularly over her depiction of him as a coarse glutton. These famous passages have been reproduced in numerous publications down the years:

It was in the course of that autumn [in 1788] that the celebrated Dr. Darwin first came to see my mother at Barr. His arrival was an era in my life; I saw him then with the eyes of a child, and now, in age, I can only describe him from the stores I then locked up in my memory.

It was in the latter part of the morning that a carriage drove up to our door, of that description then called a "Sulky," because calculated to hold one person only. The carriage was worn, and bespattered with mud. Lashed on the place appropriated to the boot in ordinary carriages was a large pail for the purpose of watering the horses, together with some hay and oats beside it. In the top of the carriage was a skylight, with an awning which could at pleasure be drawn over; this was for the purpose of giving light to the doctor, who wrote most of his works on scraps of paper with a pencil as he travelled.

The front of the carriage within was occupied by a receptacle for writing-paper and pencils, likewise for a knife, fork, and spoon. On one side was a pile of books reaching from the floor to nearly the front window of the carriage; on the other, a hamper containing fruit and sweetmeats, cream and sugar, great part of which, however, was demolished during the time the carriage traversed the forty miles which separated Derby from Barr.

We all hastened to the parlour window to see Dr. Darwin, of whom we had heard so much, and whom I was prepared to honour and venerate, in no common degree, as the restorer of my mother's health. What then was my astonishment at beholding him as he slowly got out of the carriage! His figure was vast and massive, his head was almost buried on his shoulders, and he wore a scratch wig, as it was then called, tied up in a little bob-tail behind. A habit of stammering made the closest attention necessary, in order to understand what he said. Meanwhile, amidst all this, the doctor's eye was deeply sagacious, the most so I think of any eye I remember ever to have seen; and I can conceive that no patient consulted Dr. Darwin who, so far as intelligence was concerned was not inspired with confidence in beholding him: his observation was most keen; he constantly detected disease, from his sagacious observation of symptoms apparently so slight as to be unobserved by other doctors.

His horror of fermented liquors, and his belief in the advantages both of eating largely, and eating an almost immeasurable abundance of sweet things, was well known to all his friends; and we had on this occasion, as indeed was the custom whenever he came, a luncheon-table set out with hothouse fruit, and West India sweetmeats, clotted cream, Stilton cheese, &c. *The Barr Chronicles*. v1 p151-2.

There was certainly unanimity amongst the Galton family when *The Botanic Garden*, Darwin's chief poetical work, was published shortly afterwards, in 1789. There are few literary works which have received such general approval and it brought Darwin instant fame as a poet. Among many warm admirers were Walpole, Richard Edgeworth, Cowper, Hayley, Wordsworth, and Coleridge, who described Darwin as the 'first literary character in Europe'. Although his reputation as a poet suffered a rapid decline *The Botanic Garden* remains an important work, and one which had a lasting influence, particularly on the English Romantic poets. 'Darwinian' interest in the work stems from its expression of the author's early theories of evolution. I have the 1973 first Dublin edition of the work [image to follow].

The Botanic Garden was greeted with enthusiasm in drawing rooms throughout the land. Here is Mary Anne's faithful depiction of its impact at Barr:

Dr. Darwin at this time was occupied in writing his beautiful poem, "The Botanic Garden." The second volume of this poem was published first [in 1789]; he preferred it to the former, and gave as a reason for this order of publication, that it "was well to put the best foot foremost." Great was the pleasure which the perusal of the poem gave to our evenings at Barr, and the absorbing charm with which I listened to its brilliant and exquisitely finished music, rendered alternately by the clear and flexible voice of my dear mother, and the deep-toned utterance of Mr. Berington;[35] both had equal delight in it, both had their favourite passages: the impression of many, though at the distance of sixty years, I shall never forget. The opening canto, the description of the ruins of Palmyra, and that of the destruction of the army of Cambyses, cannot but leave an indelible impression on all who read them.

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35 Joseph Berington (1743-1827), one of the best-known Catholic writers of his day, was a frequent visitor at Barr. Between 1785 and 1793 he was a priest at nearby Maryvale (Old Oscott) from 1785 to 1793.

My dear mother was enthusiastic in her admiration of Dr. Darwin's views on poetical composition. They appeared to her to leave nothing to be desired; and she had exquisite poetic taste.

[Images from Darwin biography.]

MATTHEW BOULTON

Matthew Boulton FRS (1728-1809) was reared to the business of making small metal wares by apprenticeship to his father, of the same name, who had a small business on Snow Hill, Birmingham. Boulton inherited his father's business in 1759 but the principal part of his fortune came from marrying Mary Robinson of Lichfield, and after her death, her sister, Anne.

Boulton was business partner of Scottish engineer James Watt. In the final quarter of the eighteenth century the partnership installed hundreds of Boulton & Watt steam engines in Britain and abroad, initially in mines and then in factories. They were a great advance on existing engines, making possible the mechanisation of factories and mills.

To Boulton must be given much of the credit for founding the Lunar Society. It frequently met at his residence, Soho House, and it was his belief in sharing thought and experience that made it so important. His ambitions were always large and he decided in 1762 to erect a great factory, Soho Manufactory, which was to become the largest such establishment in England and the principal showpiece of Birmingham. He employed 20,000 people in and around Birmingham. By 1770 his business was world-wide, and notables from many countries flocked to visit Soho. Here he produced the silver-plate, wrought silver and ormolu, some of the most important art objects of his age, as well as small articles such as buttons, buckles, watch-chains, snuff-boxes, etc.

It was Boulton who promoted the Bill in Parliament in 1772, which set up the Birmingham Assay Office. He also started the Birmingham Mint, unfortunately no longer with us. He was an enlightened industrialist who took great risks in furthering his ideals.

Boulton published very little, but his extensive correspondence shows how well-informed he was on all projects undertaken by Lunar Society Members. His range of social acquaintance was so wide that it may be said that if Boulton did not know you, you were hardly worth knowing.

Matthew Boulton had an enirely different personality to his partner, James Watt. Mary Anne Galton had many occasions to observe him at Barr:

Mr. Boulton, by his noble manners, his fine countenance (which much resembled that of Louis XIV.), and princely munificence, stood pre-eminently as the great Mecænas. *The Barr Chronicles* v1 p38

Mr. Boulton was one of those whose characteristics I clearly recollect. He was in person tall, and of a noble appearance; his temperament was sanguine, with that slight mixture of phlegmatic which gives calmness and dignity; his manners were eminently open and cordial; he took the lead in conversations, and with a social heart had a grandiose manner like that arising from position, wealth, and habitual command. He went among his people like a monarch bestowing largess…Mr Boulton was a man to rule society with dignity. v1 p40

It is clear Lunar Society members owed a great deal to Boulton's support. He had the capacity to inspire others to do great things. An instance of this is the way in which he, Wedgwood and others contributed to a fund to provide Priestley with money for his experiments.

JAMES WATT

James Watt LLD FRS (1736-1819) was perhaps the greatest engineer of all time, particularly remembered for his design of steam engines which were manufactured in partnership with Matthew Boulton. Together they revolutionised the industry of the whole world.

Watt was also a considerable chemist, developing the use of chlorine for bleaching and the preparation

of alkalis from common salt, as well as being skilled in surveying and metallurgy. He also invented the first mechanical copying press, which considerably reduced clerical labour. It was the first office machine.

James Watt appears to have been one of the most regular attenders at Lunar Society meetings and was frequently at Barr. Mary Anne has much to say about him:

Watt, whose immense general knowledge was the delight of all who knew him, and whose discovery in the application of steam has revolutionised the process of manufactures and of land and ocean travelling through the whole civilised world. *The Barr Chronicles* v1 p36

Mr. Watt…lead the contemplative life of a deeply introverted and patiently observant philosopher. He was one of the most complete specimens of the melancholic temperament. His head was generally bent forward or leaning on his hand in meditation, his shoulders stooping and his chest falling in; his limbs lank and unmuscular, and his complexion sallow. His intellectual development was magnificent; comparison and causality immense, with large ideality and constructiveness, individuality and enormous concentrativeness and caution. Whilst Mr. Boulton's eye and countenance had something of radiance, Mr. Watt's were calm, as if patiently investigating, or quietly contemplating his object. His utterance was slow and unimpassioned, deep and low in tone, with a broad Scottish accent; his manners gentle, modest, and unassuming. In a company where he was not known, unless spoken to he might have tranquilly passed the whole time in pursuing his own meditations. But this could not well happen; for in point of fact everybody practi¬cally knew the infinite variety of his talents and stores of knowledge. When Mr. Watt entered a room, men of letters, men of science, nay, military men, artists, ladies, even little children thronged round him. v1 p40-1

I have before mentioned that Mr. and Mrs. Watt were amongst our most intimate friends, and constantly formed a part of our social circle. They then lived, not in the handsome mansion and domain they afterwards occupied, but in a very moderate house in the suburbs of Birmingham, at Harper's Hill. In this house we were frequent visitors… Mr Watt, deep absorbed in his pholiosophical pursuits, was simple in all his habits. v1 p341-2

THOMAS DAY

Although Thomas Day (1748-1789) studied law and was called to the bar in 1775 he never practiced. He was a man of considerable means and spent his life as a philanthropist, writer and political essayist. His writing was influenced by his philosophy and the growing anti-slavery movement in Britain at the time. He was a friend and financial supporter of Lunar activities, but did not himself make scientific experiments. He was killed trying to ride an unbroken horse.

Day studied mechanics, chemistry and physics and was evidently regarded with affection by the Lunar Society members.

The major work of Thomas Day was his anti-slavery novel *The History of Sandford and Merton*, published in three small volumes between 1783 and 1789. It contains many short stories and was extraordinarily popular. There were at least forty-five different editions in England, Ireland, the United States, and in translation in French and German. Historians of children's literature agree that this work was a significant contribution toward lightening the heavy burden of ponderous morality then being imposed on children by their literature. The novel is accepted as one of the best children's books of its time.

Reproduced here is my own copy of the 1789 first edition of the third volume, published during the Barr Period [see image]. James Keir, fellow Lunar Society member and close friend, wrote about it to Thomas Day on 29 September 1789:

I am very glad to hear that your third volume is about publishing [i.e. in press]. It is much wished for, and I really believe that book is more likely to be of solid service than any that has been published. It is of little use to write for grown-up people; their acquired habits will generally prevail; but young unformed minds may be influenced into action and habit.[36]

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36 [Amelia Moilliet]. *Sketch of the life of James Keir, Esq., F.R.S., with a selection from his correspondence*. London: Printed for private circulation, 1859. p102.

The History of Sandford and Merton follows the reformation of Tommy Merton who is transformed from a spoiled six-year-old boy into a virtuous gentleman. Tommy, having been pampered and indulged by his mother and their slaves in the West Indies, is a proud and ignorant aristocrat; he lacks the sterling qualities of "plain, honest" Henry (Harry) Sandford, the yeoman farmer's son, who becomes his model and mentor in this little book, which was read enthusiastically by Mary Anne at Barr:

I was very fond of "Sandford and Merton;" and this book, with my mother's instructions grounded upon it, formed a decided phase in my tastes and habits of mind. I thus early learnt to abhor finery, and to consider it as contemptible.

I held also in the greatest contempt all aristocratic distinctions. I loved Henry Sandford for contemning the rich and the fashionable at Mr. Merton's, and for helping the poor. *The Barr Chronicles* v1 p10-1

JOSIAH WEDGWOOD

Josiah Wedgwood FRS (1730-1795) was from a family of potters going back 300 years. He opened a new ceramics factory at Etruria, near Stoke-on-Trent, in 1769 and transformed a craft into an industry to which he brought the skill of a scientist and the vision of an artist. The patronage of Queen Charlotte and other notables brought Wedgwood to the notice of fashionable London society as well as the local aristocracy of Staffordshire and the surrounding counties. He was interested in better transport and was one of the promoters of the early canals.

Wedgwood's own scientific researches arose principally out of the needs of his business. His main lines of enquiry were in ceramic chemistry, and his experiment books show clearly the methodical way in which he went to work. His need for coloured ware led him to investigate the theory of colours and the chemical composition of glazes and dyes.

Wedgwood is not mentioned in *The Barr Chronicles* and is unlikely to have visited Barr. The distance from Birmingham precluded regular attendance at meetings of the Lunar Society.

9. Lunar Society Members and Slavery: the seeming paradox

It was at Barr that Mary Anne first formed her own views on the utter iniquity of slavery. There is much in *The Barr Chronicles* on Mary Anne's trenchant views.

A shadow, always unarticulated, hangs over her autobiography, and helps to illuminate her life-long anti-slavery stance: this great blot was Galton's complicity in the slave trade as a manufacturer of guns and muskets. Galton's firm was the largest supplier of muzzle-loading muskets for use in the slave trade. Sent by wagon to Bristol, the muskets were loaded by slavers onto their ships and taken to Africa, where they were handed to local chieftains in exchange for slaves.

This first phase of the anti-slavery movement culminated in the passing of the Abolition of the Slave Trade Act in 1807. Mary Anne again got involved as an adult in the second phase of the movement in the 1820s, when the demand was that slavery itself should be abolished all over the British Empire. This phase in turn culminated in the passing of the Slavery Abolition Act in 1833.

[This section to be considerably expanded]

10. The Great Barr Hall Aquatint

I have reproduced here the centre part of the rarest published illustration known to exist of Great Barr Hall. It shows the mansion ensconced within its landscape and appearing very

much as it would have done to Lunar Society visitors. This hand-coloured aquatint came into my possession just over a year ago. It was previously unknown to me and other cognoscenti. Despite inducements no-one has so far been able to locate another copy of this superb work of art *anywhere in the world*.

After some judicious research it has been possible to compile informative notes on this precious aquatint This item was created from an original pen-and-ink drawing (9x6½ins) by **John Allport** (1799-1854), an Aldridge artist known to have exhibited at middle-rank art galleries in London. Astonishingly, Allport's artwork still survives in the William Salt Library at Stafford, part of the Staffordshire Record Office. It is exceptionally rare for such preparatory drawings to survive: they are usually discarded after the engraver has done his work.

Sir Joseph Scott had a particular fondness for Sidmouth in Devon and bought land there in 1812. He built a sumptuous residence overlooking the beach, named Belmont, which featured as Plate 17 in the Rev Edmund Butcher's *Sidmouth Scenery* (1817). This work contained twenty exquisite hand-coloured aquatints prepared from paintings by **Henry Haseler**, an accomplished Devon artist working exclusively in the West Country. The aquatint engraver for this book was **Daniel Havell** (1785-1826), a member of a renowned English family firm of artists and engravers. The Havells were responsible later on for illustrating the most expensive illustrated book of all time—Audubon's *Birds of America*.

Sir Joseph clearly admired the work of these artists and persuaded them to produce a single aquatint of Great Barr Hall set within its parkland. There is no other example of a 'one-off' by these artists—they exclusively specialised in illustrating published books. Haseler was given Allport's drawing from which he would have produced a scaled-up sketch. Havell then used his consummate skill to create an aquatint engraving from Haseler's work. A very small number of prints were run off: all would have been hand-coloured contemporaneously. My copy appears to be the only survivor of this small print run. It can safely be dated to circa 1820.

For the enjoyment of others I have taken great pains to create a quality limited edition of just a hundred full-size numbered copies of this superb aquatint. They are fine-art *giclée* prints, reproduced on 300gsm heavy-weight, natural-white, acid and lignen-free archive paper, employing special high-performance pigment inks which yield particularly vibrant colours. These high-tech prints are guaranteed not to fade or degrade over a period exceeding one hundred years.

11. The Great Barr Hall Collection

[To be expanded]

There is absolutely no shortage of material with which to exploit the Lunar Society links with Great Barr Hall. The Great Barr Hall Collection, collected by myself over several decades, is an unrivalled source for working up display materials for interpreting Great Barr history in all its facets. It includes rare books, pamphlets, ephemera, paintings, postcards, silverware, ceramics and several thousand prints and negatives copied from original material. It also includes a number of personal items owned by members of the Lunar Society and Scott family.

It has always been my intention to make this rare and valuable collection available to any group or individual bringing off a credible restoration of Great Barr Hall which significantly highlights the Lunar Society. Subject, of course, to a number of stringent conditions regarding storage, security and display.

==THE END==